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Lincolnshire Naturalists' Union Transactions.

1929

Edited by
ARTHUR SMITH,
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BRITISH MUSEUM
NATURAL HISTORY

Lincolnshire Naturalists' Union.

Founded June 12th, 1893.

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LINCOLNSHIRE NATURALISTS' UNION.

Statement of Account from January 1 to December 31, 1929.

RECEIPTS.	£	s.	d.
Balance in Bank, 1 January 1929	14	3	6
'Transactions' sold...	0	7	0
Members' Subscriptions	27	6	0
	£41	16	6

PAYMENTS.	£	s.	d.
Subscription to 'The Naturalist'...	0	15	0
Printing, Stationery, Blocks for 'Transactions', Notices of Meetings, etc.	25	1	3
Postages	3	6	4
Hon. Secretary for incidental expenses	2	11	0
Balance in Bank, 31 December 1929	10	2	11
	£41	16	6

SEPARATE ACCOUNT.

Life Members' Subscriptions invested in P. O. Savings Bank.

	£	s.	d.
Amount shown on Balance Sheet for 1928	71	11	7
Interest for the year 1928	1	15	6
	£73	7	1

BRITISH
MUSEUM
28 JUL 30
NATURAL
HISTORY.

RICHARD WILLIAM GOULDING.

Photographed in the Titchfield Library, Welbeck Abbey, by Mrs. Aubrey Le Blond, 1914.

In Memoriam

RICHARD WILLIAM GOULDING.

(1868—1929).

The loss of Richard William Goulding* will be very severely felt by this Union, by other Societies of persons bound together by common interests, and by all his friends. He was a distinguished antiquary—an authority on obscure biography, on picture portraits and miniatures, and on local history—and an accomplished naturalist, having entertained to the end of his life, as almost from the beginning, a sympathetic appreciation of living things. Above all he was an admirable man, one who inspired both esteem and affection, and who was capable in the highest degree of close and lasting friendship. In conversation he was always deliberate, using well-turned sentences naturally and from long-formed habit, yet even in serious utterances forbidding gravity was never present, and was rendered impossible by the affectionate regard shown to his hearer and by the warmth of his concern for the subject in hand. There was something characteristic and pleasing in the movement of his head as he turned towards the listener, and both his countenance and the tone of his voice were exceptionally expressive and lovable. Moreover he had the capacity of attending carefully to remarks made and objects shown to him; his responses invariably implying that the subject was one he would willingly pursue or that the objects interested him. These methods and qualities which were exhibited during his manhood were identical with those already possessed in boyish days. It may be said of Goulding (more than of most men) that he never changed. And all these

* Mr. R. W. Goulding, F.S.A., for many years Private Secretary and Librarian at Welbeck Abbey, died on Saturday last at Louth, Lincolnshire, where he was born and where he was much respected, admired, and loved. There and at Welbeck Abbey, states the Duke of Portland, his work will always be treasured. *Morning Post*, 12 Nov. 1929.

features (though belonging mainly to personal presence) were reflected both in his published writings and in his letters.

His works in book-form are: (1) Louth Old Corporation Records. pp. viii. 202. (With illustrations). Louth, 1891. 8vo. (2) Records of Blanchminster's Charity, in the parish of Stratton, Cornwall. pp. 187. Louth, 1894. 8vo. (3) Letters from the Originals at Welbeck Abbey. pp. xiii. 192. 7 plates. London, 1909. 4to. (4) The Welbeck Abbey Miniatures. pp. viii. 231. 29 plates. Oxford, 1916. 4to. (5) Wriothesley Portraits. pp. xv. 86. 48 plates. Oxford, 1920. 4to. And his pamphlets etc. (many of them illustrated) are together of at least equal value. His life was one of strenuous and continuous labour, much of it self-imposed, and the prodigious extent to which he generously gave willing help to others is known only to those who received it.

On natural history Goulding did not very frequently publish his observations—and since all the larger monuments to his memory are associated with other subjects—it seems fitting that the Lincolnshire Naturalists' Union (which is deeply indebted to him) should recall his contributions to our studies and his life-long interest in them. To our Transactions (whereof since 1909 he had been joint-editor) he contributed the biographical notices of some of the Presidents, and he diligently served the Union as Hon. Assistant Secretary for more than thirty years. In one of these biographical notices, that of Mr. G. W. Mason, it fell to Goulding (though he does not expressly say so) to relate experiences similar to those through which, though earlier, he himself had passed. He tells us that Mr. Mason had been a pupil at Louth Grammar School, where it was the custom to award annual prizes for the best collection of butterflies and moths or beetles, and that Mr. Mason (whose collection of butterflies and moths had been successful) was not the only member of the L. N. U. whose interest in natural history had been fostered by the offer of these prizes. While at the School in the early eighties Goulding had in fact made collections first of butterflies and moths and then of beetles, and in so doing had not only

obtained two of the prizes, but by 1884 (when he was fifteen years of age) had placed himself in a position to take a leading part in the foundation of what was known as the Louth Naturalists' Club—the parent of the present Louth Antiquarian, Naturalists' and Literary Society—the Club's original membership consisting of five boys. A further result was that in the following year he wrote a paper on the "Rhopalocerous Fauna of Louth" which was published in *The Naturalist's World*, vol. ii. Therein he attributed the greater scarcity, or extinction, of species formerly common enough, not to an increase in the number of collectors but to the fact that earlier entomologists, who seemed to have a *cacoëthes colligendi*, took many more "flies" than they required. He described the Small White as superabundant, the Cabbage White as chiefly hortensal, the Painted Lady as very intermittent, the Pearl-bordered Fritillary as sylvestral, the Gatekeeper as viatical, and so forth. The Greasy Fritillary (more valued than any of these) was stated to be "very local; only found in one moist meadow". This one moist meadow (by the border of Maltby Wood, and called the Greasy-field, a name it has continued to bear) was much frequented and much beloved by Goulding in these times; and, in later years during his stays at Louth, he often contrived to visit it. This little rough field often escaped the scythe and was delectable; the Fritillary appeared there regularly about June; and all the summer long the place was ablaze with flowers and alive with insects. The Burnet-moths crowded on the Knapweeds, the Devil's-bit, the Saw-wort, and the thistles—the Green Foresters were there—and so also the Euclidias *glyphica* and *mi*. A beetle of note of this field was *Adimonia tanaceti* which occurred on the Devil's-bit, whereon its larvae abounded, and devoured the leaves. In 1885 (June 6) Goulding took away some of these larvae and successfully reared them.

In the same year he contributed to *Hardwicke's Science-Gossip* this note:—

Fresh-Water Shells.—In the spring of last year bivalves, popularly known as "fresh-water cockles", belonging to the group Cycladae, and to the species

Cyclas lacustris (?),* were plentiful in ponds in the neighbourhood of Louth. One of these cockles, I observed, had attached itself to the foot of a newt, and another was enclosing the toe of a frog. Is this a common occurrence? —*R. W. Goulding.*

Meanwhile the name of the Naturalists' Club had been changed to Louth Naturalists' Society, and men of maturer years soon joined it. Goulding has related that the first ramble was in 1884, Dec. 26, when the members visited Burwell, Haugham and Muckton Woods; and this was the first of those excursions which in later years had been arranged for more genial months. Grisel Bottom (Burwell Wood) had been a frequent destination; and Goulding always remembered it for the Brimstone-butterfly, which from the absence of the Buckthorns, was a scarce insect.

Such things always delighted him. But the prior claims of those researches which were to make him famous were already recognized. In "Louth Old Corporation Records", 1891, (the first fruits of these researches) we are told of references in 1503 and 1651 to Louth Stone—the Blue Stone or great dolerite boulder (now in the Louth Museum),—which till 1827 and for centuries had stood at the corner of the main street of the town.† And in this work, as in later ones, we have rich treasuries,—yet in the antiquary the naturalist was never lost. To the last and for 36 years he was one of the Louth Society's secretaries; until he went to Welbeck in 1902 he attended most of the excursions, and for the *Louth Advertiser* he wrote accounts of many of them.

In 1893 Goulding was present at the celebrated meeting at Mablethorpe when this Union was formed, and thus he was one of our original members. He often spoke with approval of L. C. Miall's address on that occasion, and never forgot Canon Fowler's experiences with *Bledius* spp. on the shore. In 1896 he paid a visit to Reed's Island in the Humber to see the Water-Voles, an extraordinary plague of which then infested

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* More probably *Cyclas cornea* = *Sphaerium corneum*. No other observations on mollusca were published by Goulding: a land-shell *Plectopylis Gouldingi* Gude, 1909, was however named after him.

† Cp. "Annals of Louth". By R. W. Goulding. pp. 48. Louth, 1918.

the island. Meanwhile and later he attended the field-meetings of the Union, being named among the entomologists present, and reporting on the butterflies seen during the days. As early as 1896 in Mr. Peacock's report of the Market Rasen meeting (to the surprise of some of his friends) he wrote on the flora. On Linwood Warren on that occasion the rich purples of the two Heaths and the Heather were mingled with the richer blue of *Gentiana pneumonanthe*, so that if Goulding's enthusiasm for wildflowers was heightened at this time, that is not to be wondered at. So far the reports of these field-meetings had been written by others, but those of the meetings at Grantham (1896) and at Mablethorpe (1900) were by Goulding himself. All these reports were published in *The Naturalist*, our regular Transactions not having been commenced in these years.

In his "Notes on the Lords of the Manor of Burwell" (*Assoc. Archit. Soc. Reports*, xxiv, 1897) Goulding calls attention to the celebrated Martin Lister's association with the natural history of this county:—

> In his writings there are many references to observations made by him "in agro Lincolniensi" and "in sylvis Burwellensibus", and those who are interested in early records of the occurrence of molluscs, spiders, insects, etc., in Lincolnshire would do well to consult his works.

Martin Lister was, we learn, one of the sons of Sir Martin Lister who in 1656 had succeeded to the lordship. In 1900 this Burwell paper was followed by the memoir on "Martin Lister" (*ibid.*, xxv) wherein (though Goulding was not mainly concerned with Lister's natural history work) he deals ably and pleasantly with many aspects of it. He quotes Lister's statement of 1678 that in former days of leisure he betook himself to Lincolnshire, and there spent many months, being wholly engaged in the observation of small creatures. We are told also of his record of *Cyclostoma elegans* at Burwell Woods (where it still occurred); of his "reference to the Wild Asparagus, then, as now, found growing on the Lincolnshire coast"; and of many other such things.

In *The Naturalist*, 1901, we find this note:—

> *Adimonia tanaceti near Louth, Lincolnshire.*—A few days ago Mr. C. S. Carter

took three specimens of *Adimonia tanaceti* at Redhill, in the parish of Goulceby. It has hitherto been supposed that the range of this beetle in this district was confined to a meadow, known as the Greasy-field, adjoining Maltby Wood.—*R. W. Goulding.*

In his paper on "Christian Frederick Esberger" (1902) Goulding quotes from the journal of this Marshchapel surgeon: [1764]. "Aug. 20. Seeing two extraordinary large toad-stools (*Bovista hirci*) by the road, alighted & took 'em home with me to be dryed for use". Concerning these toad-stools (*i.e.* puff balls) unsuccessful inquiries were made for the modern name. But *Calvatia gigantea* is likely.

Mr. Mason's Lepidoptera and the Rev. A. Thornley and Dr. Wallace's Coleoptera of Lincolnshire (*Trans.*, 1906—1913) contain many of Goulding's records: *e.g.* (1) *Acronycta alni.* Louth, Hubbard's Hills, 1901 [the occurrence of the beautiful caterpillar]; and (2) *Dytiscus circumflexus.* Louth district, 1883 [one specimen in his collection]. Another record concerns an Elaterid, at Epworth, which was remembered in 1898, when the Union met there:—

One member of the party as he gazed upon the tomb of Samuel Wesley was glad to recall the fact that it had been his good fortune some 15 years before, when gazing at the same tomb, to capture the comparatively scarce beetle *Athous niger*, which alighted on a stone hard by, a beetle that he had never seen before and one that he has never seen since.

In 1910 Goulding made the opening of the Museum of the Louth Society the occasion for the writing of the Society's history— "Twenty-six years. A Retrospect". By 1888 the members were mostly seniors, and Mr. B. Crow (who had become one of the secretaries) was the survivor of a small group of Louth botanists (among whom were T. W. Wallis and others) who had attended the Rev. John Theodore Barker's botanical classes during the fifties. But the Society could not claim descent from this group, the parent Naturalists' Club, already mentioned, having been instituted independently by boys. The whole story is admirably told, though Goulding fails to indicate, and that was inevitable, his own leading share in the affairs of the Society both during its growth and at the time of its small beginnings. Elsewhere ("Louth Grammar School Boys", 1928, and *Lincs. Notes & Queries*, 1896) he tells us

of earlier Louth botanists: (1) of John Bogg (b. 1799) who was believed to have been the first to make a collection of the wildflowers of the district; and (2) of the brothers Thomas Wemyss Bogg and Edward B. Bogg—from the former of whom (it may be added) H. C. Watson received a catalogue checked for plants seen within ten miles of the town.

In the pamphlet "Louth Parish Church", 1916,* the following entries occur:—

1693. A raven built her nest at the north-west pinnacle. (This fact is recorded in *The Athenian Mercury*, 1 April 1693).

1897. February. A cormorant was seen several times on the top of the spire. (It was subsequently shot at Tathwell).

Meanwhile and for many years past Goulding's delight in botany—and in the adventive plants more especially perhaps—had been maintained and increased. In 1921 he joined the Botanical Society of the British Isles; and in that Society's Reports many of his gatherings are recorded: *e.g.* 1924 (new county record) "*Linaria repens.* Near Welbeck, on sandy ground near a wood far from any garden". At Welbeck there sprang up *Erysimum orientale*, *Euphorbia cyparissias*, *Brassica cheiranthos* and many other adventives; and in these plants Goulding was much interested, as also in others, native and otherwise, which he found at Markland Grips, the South Carr brick-fields, etc., to which places he occasionally took short outings.

In his memoir on "Sir Richard Kaye, Bart., D.C.L., Dean of Lincoln" (*Assoc. Archit. Soc. Reports*, 1924)† are included Dr. Kaye's Lists of Plants (1) at Welbeck 1777; and (2) at Kirkby 1774; and added to the latter, under the heading "1782. Tho. Clarke", another list. These lists (now carefully annotated) had been discovered in the British Museum; and of *Salvia Horminum* (included in Clarke's list) we learn that it grew then (1924) at Welbeck where it had been observed annually for several years. Dr. Druce, who describes this memoir as "a delightful study of a notable person whose acquaintance with

* "Louth Parish Church". By R. W. Goulding. pp. 22. 5 plates. Louth, 1916.

† Also separately. pp. 17. 3 plates. Lincoln, 1925.

botany was practically unknown", states that the plant-lists will afford many "first evidences" for their county.

Whenever wildflowers cast their spell over a man, Goulding wrote in 1925, they give him a hobby that ensures his never being bored or lonely when he takes country walks; and the Botanical Society's Reports including that for 1928 afford ample evidences that this spell was never broken. In our own Transactions (*e.g.* 1928, p. 78) we have further such evidences; and it is pleasant to recall (1926) this reference to the Louth district: "Mr. Goulding found *Linaria spuria* on Elkington Cow Pasture [a place of early and happy memories], where he had not previously seen it". Another entry (1928) —concerning six Red Admirals and a Painted Lady seen together on one and the same bush in a Wold Newton garden —gives strength to the often made statement that the man never forgets the insects which the boy has collected. This statement seems especially true of the beetles—Darwin we remember used to marvel at himself in this respect— and so it was in 1928, when the Duke of Portland brought to Welbeck *Clytus arietis* which had alighted on his arm at the Twigmoor gullery, Goulding recognized it at once.

But it is almost an injustice to the man of great and enduring achievements, the results of profound researches for which few have been equally equipped, thus to have given prominence to relatively small things. Yet we naturally desire to remember him, not only by his books and major memoirs, but also from his participation in those pursuits the delights of which we so often shared with him. And apart from all we desire to remember the man himself.

H. W. K.

Lincolnshire Naturalists' Union.

Presidential Address

Delivered at Lincoln, November 1929,

BY

C. S. Carter.

MOLLUSCA PROBLEMS IN HUBBARD'S VALLEY.

It is more than forty years since our Ex-President, Mr. H. Wallis Kew, investigated the Molluscan Fauna of Hubbard's Valley, and supplied therefrom some of the material for Mr. T. D. A. Cockerell's article on 'The Mollusca of Louth, Lincolnshire', published in that interesting little magazine, *The Naturalist's World*, Dec. 1885. It is, too, more than a quarter of a century since I published in *The Naturalist*, Feb. 1904, an article on 'Mollusca of Hubbard's Valley', as the result of five years' investigation of those creatures in the Valley.

Since then the property has been purchased by the Pahud Trust and presented to the Borough of Louth for the purposes of a pleasure resort. Before transferring the property, the the Trustees caused some alterations and so-called improvements to be executed, and those 'improvements' affected the Molluscan life of the Valley. I have therefore chosen that subject for this my second Presidential Address, in order to place on record the Molluscan fauna of a classic ground to Lincolnshire Conchologists, and one of the most charming valleys in the County.

Hubbard's Valley is a post-glacial ravine about a mile S.W. from the town of Louth, and is about $\frac{3}{4}$ of a mile in length. It has a depth of about 135 feet; at one point in the Valley it is 96 feet above sea level O.D., and on the hill it is

231 feet above that level, and in consequence of one record which I purpose to make, it may be mentioned that the Valley is about 12 miles from the nearest point of the coast-line.

The steep slope on the Eastern side of the Valley is known as Hubbard's Hill, and is fairly wooded with large trees, chiefly beech and ash, with a few oaks, larches and willows, but with scarcely any undergrowth. The Western side of the Valley is known as Fisher's Hill; it is not quite such a steep slope as the Eastern side, but is in parts similarly wooded and in one part has some undergrowth.

This ravine which has been described by Glacialists as a fine example of a glacial overflow was excavated in the Lower or Grey Chalk. All that remains of the former excavating water course is a small meandering trout stream.

Prior to the year 1907, when the Trustees caused weirs, or miniature cascades, to be constructed at different points across the stream, the Fresh-water Limpet *Ancylus fluviatilis* was very abundant adhering to the pebbles in the more rapid parts of the stream. Since those weirs or cascades were made, and the consequent holding up of the water, causing an accumulation of mud over the gravelly bed, I have failed to find a single example of that interesting mollusc, or of the tiny bivalves, *Pisidia*, which formerly inhabited the stream. The Wandering Mud Snail *Limnæa pereger*, however, survived the changed conditions. The Small Mud Snail *Limnæa truncatula* had previously been taken from the stream, but it now is, apparently, extinct.

In a bend of Fisher's Hill, there was at one time a depression in the slope which became filled up with debris. During the so-called improvements a trench was cut through that deposit which, on careful examination, proved to be an interesting hill-wash or rain-wash from which I have collected about thirty-two species of Shells; the specific identification of them was kindly verified for me by Mr. A. S. Kennard.

The most interesting and surprising shells amongst them were three examples of one of the estuarine species, *Paludestrina stagnalis*, which had probably been brought from the coast on

the feet of Seagulls to the area from whence the wash was derived, and thus we are introduced to the interesting problem of the dispersal of Shells, a subject with which Mr. Kew dealt exhaustively in his volume under that title, published in the 'International Scientific Series', 1893.

Eight other species of Mollusca were represented in the hill-wash which have not, as far as I know, been recorded living in the Valley, or the immediate neighbourhood. Those species were *Helix hortensis*, *Helicigona lapicida*, *Vallonia costata*, *Vallonia excentrica*, *Vitrea radiatula*, *Acanthinula aculeata*, *Clausilia laminata* and *Azeca tridens*.

About twelve species have been recorded living in the Valley which have not been found represented in the hill-wash, and those species are *Jaminia cylindracea*, *Vitrina pellucida*, *Vitrea pura*, *Vitrea rogersi*, *Euconulus fulvus*, *Punctum pygmæum*, *Sphyradium edentulum*, *Limax arborum*, *Arion intermedius*, *Arion circumscriptus*, *Agriolimax lævis*, and *Helicella caperata*. Whether this hill-wash was deposited prior to the coming into this area of the above twelve species or any one of them I am not prepared to say, but am inclined to think that it is an ancient deposit, and that therefore the shells found therein represent an ancient Molluscan Fauna.

Probably the most abundant species now living in the Valley is *Helicella caperata*, and from what has been recorded of that species elsewhere we may form some faint idea of a time limit. When living in Kent I collected that species from a well-known hill-wash or rain-wash at Otford which is stated to be of Roman date. As far as I know it has not been recorded from any pre-Roman deposit. It may be interesting here to note that what Mr. Hinton and Mr. Kennard said in their paper concerning the ancient occupation on Cleeve Hill may be applied to the case of our hill-wash: 'All the species are known to live in the County, but it is quite possible that a collection of existing species would show that other forms have migrated into the area since Roman times, and one form, *Helicella caperata* (Mont.) which now lives commonly in the locality is absent from the old soil, and this is obviously a modern

immigrant'. It may also be noted that although I obtained thirty-five species from the Romano-British hill-wash at Rucklland, which is about five miles from Hubbard's Valley, I failed to find a single example of *Helicella caperata*, and we may infer that that species is of post-Roman introduction to the area and that the hill-wash may be of, at least, Roman or immediate post-Roman date.

What the causes were for the extinction of those species found in the hill-wash, but not found living in the area, it is almost impossible to say. In this connection it may be noted that in his paper on 'Dominancy in Nature', Mr. J. W. Taylor remarked that it is 'conceded by most naturalists that food, temperature or situation, in themselves, are insufficient to account for phenomena which, without deprecating any actual effects due to climate or physical changes, may be more satisfactorily explained by the compulsory migration due to the persistant and stern struggle for existence'. Without committing myself to that idea of 'struggle for existence', I may mention certain facts which seem to support it. In his article, already referred to, Mr. Cockerell said '*Helix ericetorum* abounds on the chalky bank at the end of Hubbard's Hills, where bandless shells approaching var. *alba* outnumber the banded form'; and in his 'Field Notes, No. 3' in *The Naturalist's World*, 1886, Mr. Kew remarked: 'Heath Snails *(Helix ericetorum)* swarm on this bank', and such, moreover, was the case in the year 1899. In the autumn of 1900 I brought from Redhill, near Goulceby, about a dozen living specimens of *Helicella virgata* and placed them on this chalky bank. Nothing was seen of them until August 1902, and then only one specimen was found. Four years later, October 1906, I found four living and two dead specimens. In September 1908, I counted twenty-three specimens; and a year later, September 1909, I counted fifty-three specimens within a space of about twelve square feet. In the meantime the *Helicella itala (=Helix ericetorum)* became such a diminishing quantity that in September 1917 while I gathered a handful of *H. virgata* within the space of a few feet I failed to find more than three living

specimens of *H. itala* along the whole length of the bank. Since then I have failed to find a single living example. Such facts certainly seem to suggest that struggle for existence was a factor in the extinction of some of the species to which I have referred, and also that *H. virgata* is a much more vigorous species than *H. itala*.

Another problem which has interested me is the possible or probable effect of food-plants on the colouration of the shells of *Helix aspersa*, *H. nemoralis* and other snails. On this subject certain significant groupings have been observed by me on this same chalky and grassy slope—where amongst other striking colour-forms the rather rare *Helix aspersa* var. *exalbida* occurs—but my observations are as yet somewhat incomplete, and I hesitate for the present to describe them.

In order to ascertain the relative numbers of the different species, and to find representatives of the smaller species, I took home in 1902 a two-pound sugar-bag full of soil from beneath the fallen leaves, and by carefully washing this soil I obtained 147 specimens, besides many indeterminable fragments, representing 19 specimens:—

Carychium minimum	52	specimens
Hygromia striolata (=rufescens)	10	,,
Hygromia hispida	13	,,
Helicella itala, juv.	2	,,
Vallonia pulchella	13	,,
Ena obscura	1	,,
Jaminia cylindracea	2	,,
Jaminia muscorum	8	,,
Vertigo pygmæa	1	,,
Clausilia bidentata	4	,,
Cæcilioides acicula	1	,,
Cochlicopa lubrica	4	,,
Vitrea cellaria	1	,,
Vitrea pura	2	,,
Vitrea crystallina	23	,,
Euconulus fulvus	1	,,
Limax, sp.	1	,,

Pyramidula rotundata	4 specimens
Punctum pygmæum	4 „

Perhaps the most remarkable observation I have made in Hubbard's Valley was that of the pairing of *Limax maximus* which was reported with eight sketches in our Transactions for 1906. It may be taken as a compliment to our Transactions that those notes were referred to by Drs. B. Peyer and E. Kuhn, of Zurich, in their monograph 'Die Kopulation von *Limax cinereoniger* Wolf', December 1928.

My latest list of mollusca for Hubbard's Valley and Hill and Fisher's Hill, which together do not exceed 27 acres in extent, numbers fifty-three species and forty-two varieties. The list in detail forms an addendum to this address.

LIST OF NON-MARINE MOLLUSCA OF HUBBARD'S VALLEY, LOUTH.

The nomenclature is that of the Conchological Society's List of 1904.

Species marked * were found in the hill-wash,—Holocene.

* *Limax maximus* L. Formerly plentiful, but now rarer.
var. *fasciata*. Fairly common.
var. *ferussaci* One seen on a beech tree, 26 June 1902

Limax arborum Bouch-Chant. Fairly common on beech trees.

Agriolimax agrestis (L.). Abundant.
var. *sylvatica*. Fairly common.

Agriolimax lævis (Müll.). A few found among dead leaves in moist places.

Vitrina pellucida (Müll.). Fairly common among dead leaves in moist places.

* *Vitrea crystallina* (Müll.). Common among dead leaves.

* *Vitrea* (*Polita*) *cellaria* (Müll.). Common.

Vitrea (*Polita*) *rogersi* B. B. Woodward. Taken in 1885 by Mr. Kew on the wooded parts of Fisher's Hill and identified at the time by Mr. Cockerell as *Hyalina glabra*.

* *Vitrea* (*Polita*) *nitidula* (Drap.). Fairly common especially by the side of the stream.

Vitrea (*Polita*) *pura* (Ald.). Rather common.

var. *nitidosa*. Rather rare.

* *Vitrea* (*Polita*) *radiatula* (Ald.). Not found living, but found in the hill wash.

Euconulus fulvus (Müll.). Rather rare.

* *Arion ater* (L.). Common; seen feeding on the leaves of Ivy in the wood by Mr. Kew; and I saw an adult of typical colour on the grassy slope as early in the year as 23rd April. On 28th August 1902, about mid-day, I observed two individuals pairing. A considerable number of the shell-granules were obtained from the hill-wash.

var. *brunnea*. Rather rare.

var. *swammerdamii*. Only one specimen.

Arion intermedius Norm. Fairly common among dead leaves in moist places.

var. *alba*. One specimen found on Fisher's Hill, 1907.

var. *normalis*. Two specimens found on Fisher's Hill, 1907.

Arion hortensis Fér. Common.

Arion fasciatus Nils. Rather rare.

Punctum pygmœum (Drap.). Fairly common.

Sphyradium edentulum (Drap.).

var. *columella*. One found among dead leaves in 1906 by Mr. Vernon Howard.

* *Pyramidula (Gonyodiscus) rotundata* (Müll.). Very common, both living and in the hill-wash.

var. *turtoni*. Fairly common.

[*Helicella virgata* (DaC.). I placed about a dozen living specimens on the grassy slope in the Autumn of 1900; by the Autumn of 1909 they had multiplied so that I was able to collect 53 specimens within the space of about 12 feet].

* *Helicella itala* (L.) Formerly abundant on the grassy slope, but now apparently exterminated by *H. virgata*. Fairly common in the hill-wash.

var. *minor*. I found two specimens on 8th August 1902,

* var. *alba*. Fairly common formerly. Also found in the hill-wash.

var. *hyalozonata*. Noted by Mr. Cockerell as having been taken by Mr. Kew on the grassy slope in 1885.

Helicella (Candidula) caperata (Mont.). Abundant.

var. *major*. A single specimen measuring ·5 inch in diameter was taken by Mr. Kew on the grassy slope in 1885 and noted by Mr. Cockerell in *The Naturalist's World* for that year.

var. *ornata*. Fairly common.

* *Hygromia granulata* (Ald.). Not recorded living, but found in the hill-wash.

* *Hygromia hispida* (L.). Fairly common.

var. *hispidosa*. Common.

var. *subrufa*. Rather rare.

var. *nana*. Not found living, but a few found in the hill-wash.

* *Hygromia rufescens* (Penn.). Very common.

var. *albocincta*. Fairly common.

var. *alba*. Fairly common.

var. *globosa*. Three specimens I found in 1900-1 were determined by Mr J. W. Taylor as "*globosa*," one of them * var. *alba*.

* *Acanthinula aculeata* (Müll.). Not recorded living, but a few found in the hill-wash.

* *Vallonia pulchella* (Müll.). Fairly common among dead leaves and in the hill-wash.

* *Vallonia costata* (Müll). Not recorded living, but found in the hill-wash.

* *Vallonia excentrica* (Sterki). Not recorded living, but found in the hill-wash

* *Helicigona lapicida* (L.). Not found living within about four miles of the Valley, but found in the hill-wash.

* *Helicigona (Arianta) arbustorum* (L.). Formerly very common, but diminishing in consequence of the cutting away of the herbage by the stream.

Found in the hill-wash.

var. *alpestris*. Fairly common formerly; some of them + var. *flavescens*.

var. *conoidea*. Two examples regarded by Mr. Cockerell as referable to this variety were taken by Mr. Kew in 1885. A few have since been taken.

var. *fuscescens*. I found one example on 28th July, 1902.

var. *flavescens*. Formerly fairly common, but now in diminishing quantity.

var. *albina*. I found one example in 1898.

* *Helix aspersa* Müll. Very common. On 8th August, 1902, I took a specimen on the grassy slope in the act of depositing ova; 163 eggs had been already deposited, and between the 8th and 11th of that month 23 more eggs were laid in captivity, making a total of 186. Fairly common in the hill-wash.

var. *nigrescens*. One specimen approaching this variety I took on 8th August, 1902.

* var. *undulata*. A few specimens taken living; also in the hill-wash.

* var. *flammea* (Picard). A few taken living; also found in the hill-wash.

* var. *albofasciata*. A few on the grassy slope; also found in the hill-wash.

* var. *zonata*. A few taken on the grassy slope; also in the hill-wash.

var. *exalbida*. A few taken living on the grassy slope.

* *Helix (Cepæa) nemoralis* L. Very common. Also in the hill-wash.

* var. *rubella*. Fairly common. Rather rare in the hill-wash; only four examples taken, the band formulæ of them being:

12345	2 specimens
123(45)	1 ,,
00300	1 ,,

* var. *libellula*. Very common. Also in the hill-wash;

the band formulæ of them being :

12345	5 specimens
(123)(45)	4 ,,
123(45)	4 ,,
(12)3(45)	1 ,,
0234 :	1 ,,
0(23)(45)	1 ,,
00300	1 ,,
(12)345	1 ,,
023(45)	1 ,,
1(23)45	1 ,,
: : : : :	4 ,,
	24

var. *bimarginata.* I took two specimens on 8th August, 1902.

var. *albina.* I took a few specimens on 31st August, 1901.

var. *major.* One specimen + var. *libellula* 123(45).

* *Helix (Cepæa) hortensis* Müll. This species is not known to be living within three or four miles of the Valley; but is fairly represented in the hill-wash.

* *Ena obscura* (Müll). Formerly fairly common, but now apparently in diminishing quantity. Found in the hill-wash.

var. *albina.* Thirty years ago I found this beautiful variety in fair numbers on the beech trees; but during the last few years I have failed to find any.

* *Cochlicopa lubrica* (Müll.). Fairly common living and in the hill-wash.

* var. *lubricoides.* A few specimens taken living, and in the hill-wash.

* var. *exigua.* Not taken living, but a few shells found in the hill-wash.

var. *fusca.* A few examples taken from among dead leaves in moist places.

* *Azeca tridens* (Pult.). This species is very rare in the County, and is not known living within about four miles from the Valley. A few specimens were found in the hill-wash.

* *Cœcilioides acicula* (Müll.). A few dead shells found among dead leaves. Fairly common in the hill-wash.

Jaminia (Lauria) cylindracea (DaC.). A few found among the dead leaves in moist places.

* *Jaminia muscorum* (L.). Fairly common, but apparently preferring drier places than the last species. Fairly common in the hill-wash.

* *Vertigo (Alaea) pygmæa* (Drap.). A few taken with *J. muscorum*. A few found in the hill-wash.

* *Clausilia (Marpessa) laminata* (Mont.). Not taken living, but a few shells found in the hill-wash.

* *Clausilia (Pirostoma) bidentata* (Ström). Very common. I once took more than 30 specimens from one small tree stump.

var. *everetti* (Miller). Fairly common.

Succinea elegans (Risso). Fairly common on the herbage by the stream prior to 1907, but after that date in diminishing quantity, owing to the herbage being cut.

* *Carychium minimum* Müll. Very abundant among dead leaves in moist places. Also abundant in the hill-wash.

Ancylus fluviatilis Müll. Formerly common on pebbles in the rapid part of the stream; but owing to the alteration of the stream in 1907 the species apparently became extinct.

Limnæa (Radix) pereger (Müll.). A small form formerly occurred abundantly in the stream, but it is now rather rare.

Limnæa truncatula (Müll.). A few taken about thirty years ago, but now apparently extinct.

Physa fontinalis (L.). Formerly a few found in company with *L. pereger*.

[*Pomatias (Cyclostoma) elegans* (Müll.).
On 7th August, 1910, I placed about 12 living examples on the Fisher's Hill side, and about 6 on Hubbard's Hill side. They were brought from Welton Wood, near Willoughby. So far I have not since seen any of them].

Sphærium corneum (L.). A few were taken from the sluggish part of the stream.

Pisidium amnicum (Müll.). A few found with the last-named species.

Pisidium pusillum (Gmelin). Formerly fairly common in the stream.

Report of the Hon. Secretary,

1929.

Five Field Meetings were held during the year.

The One-Hundred-and-Thirty-eighth Meeting was held at Stainton Wood on Thursday, June 26th. The Flora was interesting and yielded a number of Orchids, including the Butterfly and Bird's-nest. The Guelder-rose and Spindle-tree were among a long list of other plants seen. Insects were plentiful, the Small Pearl-bordered Fritillary being the most abundant of several species of butterflies. *Rhagium inquisitor*, one of the rarer beetles, was taken.

The One-Hundred-and-Thirty-ninth Meeting was held at Holbeck on Thursday, June 27th. Across country to Hoe Hill a piece of swampy ground claimed considerable attention because of the luxuriant growth, particularly of masses of a species of *Equisetum*. Among other plants, some fine specimens of *Orchis Fuchsii*, a sub-species of *maculata*, were found. Mr. Neal Green met the party at Holbeck Manor and conducted them through a most delightful glen-like area; the site of extensive quarries from which the stone for local churches had been obtained, and also perhaps for the Walls of Horncastle in Roman times. The water at the spring-head of

Tennyson's "Brook" was seen running into the pool at the bottom of the quarry ere it made its way through picturesque places to the sea. The whole of this area had a wealth of vegetation, from stately trees to mosses and lichens, with water plants in the pools. It was a sanctuary for many wild birds and native animals, and insect life was abundant. An exposure where the sandstone was being quarried yielded a sight of some of the characteristic fossils, which were however too brittle to be successfully parted from the matrix. Mr. and Mrs. Neal Green entertained the members to tea, and most kindly offered them every facility for the investigation of the delightful grounds. A most interesting day was spent—all too short for such a picturesque area.

The One-Hundred-and-Fortieth Meeting was held at Scallows Hall on Thursday, August 1st. A downpour of rain in the morning caused a delayed start, but notwithstanding the soaked condition of the ground an interesting walk was taken. It was, perhaps, the one meeting of the year when conchologists found work among the land molluscs. *Helix hortensis* and its varieties were abundant. A Badger was seen in one of the woodland drives. Miss Brewster conducted the party and entertained them to tea at the Hall.

The One-Hundred-and-Forty-first Meeting was held in the Ancaster District on Thursday, August 29th. The Railway cutting near the station was examined, after which the members were conveyed by 'bus' from point to point, making an early visit to a quarry where a wealth of Butterflies, including the Chalk Hill Blue, was on the wing. Culverthorpe Woods and Ponds, Heydour Southings and Nightingale Plantation as well as the great quarries in the Limestone all yielded much of interest. Mr. H. Preston explained the geological features. The Rev. S. C. Wood conducted the party and entertained them to tea at Ancaster.

The One-Hundred-and-Forty-second Meeting was held on Thursday, September 26th, at Frieston Shore. Mr. Fred Kime conducted the members who were conveyed by 'bus' from Boston. Calls were made on the way where plants of

interest were known to occur. Rochford Tower was visited. Notwithstanding the dryness the salt-marsh plants were interesting, and the President collected a number of brackish water molluscs. Later in the day a call was made where a small area of Woad was being cultivated. Mr. Frank Waite kindly entertained the members to tea on their return to Boston.

The thanks of the members are due to those who have allowed them to visit their grounds, to those who have entertained them, and to those who have made local arrangements and acted as conductors, and who have together made it possible for them to do good work in the short time at their disposal.

It is with deep regret that I have to refer to the loss by death of Mr. J. Mawer, of Louth, the Revd. G. F. Casswell, M.A., of Melton Ross, Mr. T. Stow, of Grantham, and Mr. R. W. Goulding, F.S.A., four of the Union's very valued members. Mr. Mawer was one of the original members, and though in later years not seen at the field meetings, he continued to take a great interest in our welfare. Mr. Stow joined the Union in 1897. He was one of the most regular attenders at its meetings, a keen naturalist, perhaps best known for his interest in the land and freshwater mollusca. The Revd. G. F. Casswell was elected in 1906, and thus he was another of our long-time colleagues, whose loss we deplore. Many of us remember how kindly he received the Union at Melton Ross in 1919, when, amongst other things, *Vertigo pygmaea* was found in his Parsonage grounds. Mr. Goulding was one of our most ardent workers, and his co-operation will be greatly missed by us. Though he was rarely seen at our meetings his interest in the Union from its foundation onwards never waned. As Assistant Secretary, Co-Editor and Treasurer he did much of the official work of the Union. He was often urged to become President, but always declined, though appreciating the honour his fellows wished him to accept, and he remained to the end the guiding hand of the institution.

The following ladies and gentlemen have been elected

members during the year :—

Mr. F. T. Baker, Lincoln.
Mr. C. W. Dixon, Grimsby.
Mr. C. E. Garton, New Brumby.
Mr. F. M. Luce, B.A., London.
Mr. A. E. Smith, M.P.S., Sleaford.
Miss Frances K. Staunton, Staunton.
Mr. W. Steer, B.A., East Malling.

It is very desirable that the pages available in the "Transactions" should be increased so that more space may be at the disposal of contributors, and that more records may be published. To make this possible means a substantial increase in the membership. Your Secretary will be much pleased to receive the names of anyone interested in the work of the Union; and members are asked to assist by introducing new members.

The Annual Meeting was held at Lincoln on November 28th, when Mr. C. S. Carter read his Presidential Address, entitled "Some Mollusca Problems in Hubbard's Valley". Mr. Ernest J. Stream, M.A., F.L.S., was elected President for 1930, and Mr. A. Roebuck, F.E.S., Vice-President. The Treasurership was merged in the office of Secretary for the time being, and Mr. F. T. Baker was appointed Assistant Hon. Secretary. The Sectional Officers were re-elected.

Sectional Officers' Reports.

BOTANY.

Miss S. Catherine Stow.

The records this season are more interesting than usual.

Miss Marsden sends the following records:—*Limnanthemum peltatum*, for Spalding, a new record for Div. 18. *Iberis amara*, for Ancaster Quarry at Haydor, a new record for Div. 14. *Mathiola incana*, for Mablethorpe, Div. 9—Alien. *Orchis hircina*,

one specimen taken by Miss J. Gibbons at L.N.U. Meeting in June, near Tetford, Div. 10. Peacock's Check list, 1909, gives it for Div. 3, stating that 'it must have been planted'. Indentified by Dr. Druce. *Chenopodium hybridum*, for Boston, Oct. 15. This is not uncommon in Boston neighbourhood.

Some specimens of what was supposed to be *Orchis maculata* were taken at Holbeck on the occasion of the L.N.U. Meeting last June. Mr. F. T. Baker states that these specimens were seen by A. E. Mahord, F.R.C.S., an authority on Orchids, and they are undoubtedly *O. Fuchsii*, one of Dr. Druce's sub-species of *O. maculata*. This is a first record for the County.

Mr. S. A. Cox, of Grimsby, reports *Orobanche purpurea* for Immingham, Div. 4. Alien.

Knowing that the common Field Pansy, *Viola tricolor*, was being studied, and Lincolnshire specimens asked for, by Dr. Eric Drabble, I sent some specimens to him, and now record *Viola Deseglisei* Jord. and *Viola Lloydii* Jord. for Ancaster, Div. 15; and *Viola anglica* Drabble for Saltersford, Div. 15. These are all new County Records.

Dr. Willoughby Smith reports an alien clover *Trifolium tripacum* for Gainsborough.

CONCHOLOGY.

J. F. Musham.

The past season, which has been an exceptionally dry one, has added little to our previous records. *Pisidium personatum* was however an interesting capture at the source of the 'Tennyson-Brook' in Holbeck Manor grounds, making an addition to Div. 10 N.; and a similar addition to Div. 8 N. is made by *Helicella heripensis* from Beesby Lane. Mr. C. S. Carter reports *Paludestrina ventrosa* and *Phytia myosotis* from Frieston Shore, making further additions to Divs. 12—17.

ENTOMOLOGY.

A. E. Musgrave.

The year 1929 has been rather a good one for Entomology. Most of our commoner butterflies appeared in profusion, whilst some of the less common species, such as the Skippers and Blues, were in larger numbers than usual. Twyford Forest, near Colsterworth, I visited in early June, and found the Speckled Wood Butterfly *(P. egerides)* fairly common. The species was to be found in practically every ride in the wood, though shady glades with long grass growing were preferred. I captured about half a dozen worn females and caged them for eggs. Fifty-six eggs were laid, and all proved fertile. At Ancaster, the common Blue (*L. icarus*) and Brown Argus (*L. astrarche*) were both common in June. I caged a female *icarus* of the ab. *cærulea* form, and have since bred a nice series from the eggs. Later on in August, the second brood of the species was common, together with the Chalkhill Blue (*L. corydon*). The White Lettered Hair Streak (*T. w-album*) has been noted on several occasions by the Rev. H. E. Stancliffe visiting flowers in his garden at Belton. He also took a larva of the Alder Moth (*A. alni*) in Belton Park. A full-grown larva of the Death's Head Moth (*A. atropos*) was brought to the Grantham Museum, but it failed to pupate. During the second week in August, in company with Mr. W. Bond, F.R.I.B.A., I visited a number of Lincolnshire Churches, the stonework of which was suffering from the ravages of the Mason Bees. At Ashby Puerorum we found that most of the stone on the South side was bored and mined by the bees to such an extent, that in some parts the stone could be broken away by the fingers. At Little Steeping the bees were again in evidence, though not to such an extent as at Ashby. At a small sand pit in the district the bees were found to be exceedingly common, the whole face of the green-sand showing evidence of their tunnelling. I captured several of the bees and sent them away for identification, and collected a number of live cells from the tunnels. In every case the situation

chosen by the parent bee was in the sandstone, and facing south. A cylinder of about 2″ in depth (running usually in a horizontal direction) is excavated; and three or four cells, about ¾″ long and ¼″ broad and placed end to end, are constructed in it. The substance of which the cells is composed resembles gold-beater's skin. They are filled with a mixture of pollen and honey, and an egg is deposited in each cell just before completion. The bee is one of the smaller species of *Andrena*, but its exact identification is not yet certain. There are about thirty species of these bees, and quite frequently two or three species may be found in the same colony, together with their parasites belonging to the genus *Nomada*. It is hoped, however, that when the bees emerge from the cells next Spring the various species may be identified. Mr. T. H. Court, of Market Rasen, notes that "*A. aglaia* was abundant; also *Thecla w-album*, more so, in fact, than *T. quercus*. Varieties of *C. pamphilus* continue to turn up with unfailing regularity. An unusual occurrence was the appearance of a full-grown larva of *Bombyx rubi* sunning itself on the Golf Links here on January 19th".

GEOLOGY.

H. Preston, F.G.S.

Note on the Agate-like Nodules of Ironstone from the Middle Lias Marlstone at Grantham.

Some few weeks ago, the Water Works Company were putting down a new main for water supply to property on the east side of the town. Having to cut into the Marlstone Rock Bed, it chanced that a series of nodules of Ironstone were turned out, which, when sectioned, showed well the process by which the Iron-Oxide had been brought into a banded structure previous to the more common complete structure known as the Ironstone Box. Some of these nodules I brought to the Annual Meeting for examination. Originally, the Ironstone is in the form of blue carbonate, that is, the Iron being in a soluble

form and mixed with a small proportion of clayey matter, gives to the Limestone a blue colour. When this stone gets near to the surface, where rain water with its carbonic acid and other acids and gases gathered from the atmosphere and surface vegetation act upon it, the soluble Iron in the stone is changed into insoluble Red-Oxide. When, in process of time the moisture dries out of the stone, the Iron-Oxide is concentrated into various bands which finally reach the surface of the nodule and leave nothing internally but clayey dust, and the Ironstone Box is formed. In the case of the Agate-like structure of the specimens, the process has been caught at an early stage, hence the interesting, but somewhat uncommon, banded structure.

I may say that the fossils which were originally in the Limestone are often altered into the Blue Ironstone, and afterwards into the Brown Oxide similar to the stone itself.

ORNITHOLOGY.

Notes on the Migration of Birds in North Lincolnshire, in the Autumn of 1929.

G. H. Caton Haigh, F.Z.S., M.B.O.U.

The early Autumn of 1929 was fine and extremely dry, following a very dry summer, consequently covert of all sorts was very poor, clover and turnips were very thin and grass-land completely bare. The amount of visible migration was greatly below the average, particularly as regards the smaller passerine birds. The only species which passed in their usual numbers were the Peewits and Pink-footed Geese. The prevailing winds during the early part of the season were between N. and S.E.

On September 2nd, I only saw three or four Willow Wrens, a couple of Whitethroats and five Whimbrels. On 3rd, a single Lesser Whitethroat, and I shot a Snipe coming in from the sea. On 4th, a Pied Flycatcher, a Lesser White-

throat, a Redstart, several Common Whitethroats and Willow Wrens. On 5th, a single Pied Flycatcher. On 6th, two Wheatears, a Redstart and a Kingfisher. On 7th, several Willow Wrens and a Redstart. On 9th, a Wheatear, Willow Wren and Kingfisher. On 10th, several Common Whitethroats, a couple of Redstarts, a Willow Wren, Wheatear and Lesser Whitethroat. On 12th, several Common Whitethroats and Whinchats, four Pied Flycatchers, a Redstart and Lesser Whitethroat, and a single Common Sandpiper. On 13th, a couple of Redstarts and five Wigeon appeared. On 15th, nine Geese were seen going S. On 18th, I obtained an immature Red-breasted Flycatcher and saw a single Redstart. On 19th, I shot another Red-breasted Flycatcher, but saw no other migratory birds. On 21st to 23rd, only a few Redstarts. On 24th, a flock of forty Geese going S. over North Cotes. On 25th, Peewits coming in from the sea and going N.W. till 12 o'clock. Four Redstarts in the hedges. On 26th, I saw a flock of 32 Geese going E. over Grainsby, and was told that three other flocks had passed over just previously. Peewits were coming in at North Cotes till 11 o'clock. A few Redstarts, Whitethroats and a Pied Flycatcher in the coast hedges. On 27th, a flock of 30 Geese to N.W. over Grainsby in morning, and in afternoon I saw 500 or 600 on the Humber at Whitton. On 30th, nothing but a couple of Redstarts.

On October 1st, a large flock of Geese going N.W. over Grainsby. On 8th, many flocks of Starlings and Peewits going N.W., a Redstart and Pied Flycatcher, and the first flock of Twites. Many Swallows left, but a considerable number still remain. Last seen on October 10th. On 9th, Peewits were travelling to N.W. over the Wolds all the morning. On 10th, there was a considerable migration, including Redwings, Fieldfares, Robins, Rock Pipits, Jack Snipe, and Peewits, and a single Redstart. On 15th, Peewits and Starlings going N.W. till 2 o'clock. On 16th, Peewits travelling continuously from day-break till between 1 and 2 o'clock. About 2000 Geese came up from the Humber at day-break and dropped on various fields on the Wolds; also three Swans

were seen near Tetney Lock. On 17th, quite 3000 Geese scattered over the Wolds. The greater part of these flocks left this district suddenly after this date owing, I think, to the farmers having turned sheep into the barley stubbles which are chiefly frequented by the Geese at this time of the year. After this they betook themselves to the low lying land on the sides of the rivers Trent and Ancholme, where they remained for most of the winter. About the middle of January there was a general decrease in their numbers and many flocks were seen travelling S. or S.E., but on February 8th I heard of the appearance of a flock of 500, and by the 12th these had increased to quite 3000. On February 24th about 2000 were still present, but by the 27th the number had gone down to 500. By March 1st they had decreased to under 100, and were last seen on 14th.

October 20th, a great passage of Peewits from day-break to noon, especially from 7 to 9 o'clock. Later it rained heavily and the flight slowed down. On 21st, again a very strong flight of Peewits lasting nearly all day, most of the flocks being within gunshot, but some close to the ground. On 22nd, the flight continued, but the flocks came in at longer intervals and were flying very low. Some Starlings also moving, and I saw a small flock of Grey Plovers and a single Short-eared Owl. On 23rd, flocks were still coming in but at long intervals and at a great height. A few Redwings and Fieldfares along the coast and a single Merlin. On 25th, this flight was nearly over, only two or three flocks coming in all day; and Blackbirds were abundant in hedges near the coast. On 28th, a few Rooks travelling N.W. and a couple of flocks of Golden Plovers. On 30th, with a strong N. gale, I noticed an increase in the numbers of Knots, Stints and Grey Plovers on the sands, and the hedges were full of Blackbirds. On 31st, Rooks, Grey Crows, Starlings and Woodcocks but not in great numbers. The Grey Crow was seen by Mr. F. Stubbs for the first time at day-break on October 19th and following mornings travelling along the sands at low water to N.W., but none of these appear to have remained in the district.

On November 1st, there was much migration; Grey Crows coming in continuously all day, generally two or three together, never more than four or five. Peewits also came in in great numbers from day-break till 12-30, when the flight stopped suddenly, but re-commenced at 3 o'clock and continued till dusk. In addition to these, Rooks, Larks, Redwings, Fieldfares, Starlings, Blackbirds and Rock Pipits were also moving. November 4th, Blackbirds very abundant near the coast, and again on the 8th, with Fieldfares and one or two Water Rails. On November 13th, I saw a Rough-legged Buzzard and three White Owls along the sea-bank at North Cotes, also a number of Greenfinches. On 14th, one of the men working in the drains at Thoresby Bridge reported a flock of 38 Swans flying N.W. On 16th, a Grey Phalarope was shot in North Cotes Cut, and I shot a Woodcock on the sea-bank. On 22nd, I shot an immature Golden Eye at North Cotes Sluice. On 24th, about 2000 Wood Pigeons came into Fenby Wood. On 29th, another flight of Peewits from early morning till three o'clock.

On December 3rd, a strong flight of Peewits till 2 o'clock. The immigration of the Peewit this Autumn has been on a gigantic scale. Many hundreds of thousands must have come in, and owing to the mildness of the season they were able to winter with us. Indeed I think that with the exception of the Starling and the Rook they were the most abundant bird in this district. On December 5th, I saw a Peregrin at Grainsby. On 10th, three White-fronted Geese alighted in a wheat-field at North Cotes, but did not stay long. On 23rd, a Merlin at Roxby.

On January 1st, 1930, among a large flock of Geese at Bonby I observed an albino example. On 2nd, at Worlaby, I saw six Swans flying overhead which from their size I judged to be Bewick's Swans. On 17th, I saw a Peregrine and a Merlin at Worlaby. The latter took a Starling out of a flock, and proceeded to eat it in the middle of a large grass field, perching on the ground to do so.

On February 4th, I heard that a White-fronted Goose

had been shot at Saltfleet about a week before out of a party of four. On 5th, I saw a flock of about 300 Wigeon at Grainthorpe Haven. These had appeared at Tetney Haven a little earlier. They were very wild and few were shot, even by the punt gunners, although they remained to the end of the season.

On March 15th, I received from Mr. Stafford Walter, a Spotted Crake which had been found under the telegraph wires near Horncastle. It was in extremely poor condition, and had probably wintered in the County. I have never seen this species after October, and of recent years it appears to have become very scarce.

As will be seen by the above notes the season was a somewhat uninteresting one from a naturalist's point of view, and still more so from that of the wildfowler. All wildfowl were scarce except the Peewit and the Pink-footed Goose, both mild weather species. No Brent Geese appeared. I heard of no Scaup. Tufted Ducks and Pochards were very scarce, and were probably all home-bred birds, as also I think were the Mallards. Golden Eyes, Mergansers and Goosanders were very scarce, and even the Scoters were less numerous than usual. Woodcock and Snipe were also scarce, though the former received a considerable accession in numbers early in January. Birds of prey were far less numerous than usual, and with the exception of the two Red-breasted Flycatchers mentioned above, I heard of no rare birds having appeared in this County.

BIRD NOTES FROM THE GRIMSBY DISTRICT, 1929.

S. A. Cox.

Winter Visitors.

No unusual happenings came under my personal observation during January. A Common Buzzard was shot at Healing during the month, and identified by my colleague, Mr. R. May, of Limber.

The spell of arctic weather which began early in February,

and continued, apart from a short break, until the first week of March, brought with it several interesting and unusual visitors.

On February 3rd I saw scores of Common Pochard and Tufted Duck, a White-eyed Pochard and a duck Scaup at Newsham Lake. In addition there were hundreds of Mallard and Teal, many Wigeon and a Whooper Swan. The latter seemed very unpopular with the semi-domesticated Mute Swans, and was constantly buffeted whenever it tried to associate with them. Its flight was graceful and buoyant, and when on the water it swam low, like a Cormorant, with most of the body submerged and the neck stiffly erect.

On February 17th I again visited Newsham Lake, and saw a Whooper Swan on the wing some 300 yards away; five more Whoopers were standing on the ice, and I was able to view them at close quarters. Their bills were black at the tip, with a large, angular patch of lemon-yellow extending to the eye. When seen from the front the black did not extend to the forehead and bisect the yellow, thus preventing any chance of confusing the species with Bewick's Swan. There were also present 25 Mute Swans, a drake Wigeon, Tufted Duck and Common Pochard in plenty, a pair of Scaup, two White-eyed Pochard, three Goldeneyes and three Cormorants. One of the Goldeneyes was an adult drake, the others immature. When not engaged in fishing the Cormorants sat motionless for hours on the trees by the lakeside, and in that attitude they were remarkably inconspicuous. One could tell that they were unaccustomed to perching on trees, for on two occasions they alighted on dead branches which would not have supported the weight of a Rook, much less that of a Cormorant. The result on each occasion was that the dead branch snapped and fell, and the startled Cormorant hastily took wing and settled elsewhere. As I was leaving the lake a Merlin flew close by, and caused a good deal of commotion among the water-fowl.

By February 24th most inland waters were completely frozen over; but Newsham Lake, with its numerous springs, remained comparatively free of ice, and consequently it be-

came a rendezvous for water-fowl from many miles around. I saw five Whooper Swans, two Cormorants, a Dabchick, several Wigeon, a White-eyed Pochard, two Scaup, Common Pochard, Tufted Duck and four Goldeneyes. The newcomer amongst the Goldeneyes was a mature duck. Besides these, there were hundreds of Mallard and Teal, several Herons and about fifty each of Coot and Moorhen.

On March 3rd, the last day of the great frost, water-fowl were not quite so numerous as before. There were two Cormorants, Common Pochard, Tufted Duck, and a duck Scaup on Newsham Lake. Later in the day I saw 12 Whooper Swans flying north over Brocklesby Park, their long outstretched necks and snowy-white plumage gleaming in the winter sunshine, a truly magnificent sight.

Scaup were very plentiful in the Humber estuary during the whole winter. I saw them daily in varying numbers until March 27th. Many came inside the Grimsby fish dock during the frost—one day I counted as many as fourteen. Once I watched a drake Scaup in beautiful plumage swimming, quite unconcerned, within five yards of the quay-side where I was standing.

On March 12th I saw a party of very dark-coloured ducks far out in the river, most probably Common Scoters.

Late in the afternoon on March 15th two skeins of Geese, numbering 12 and 13 respectively, passed over Weelsby, travelling E.N.E.

I recorded no Fieldfares after April 6th, but Redwings lingered at Weelsby until April 24th, an unusually late date. Throughout the whole winter both the Snow Bunting and the Brambling were exceedingly plentiful.

SPRING MIGRATION.

As usual the first spring migrant was the Chiff-Chaff, which I heard at Broughton on March 24th.

No further migrants were seen or heard until April 17th, when I saw three Yellow Wagtails in a marshy field known as "The Ings" at Humberstone, a favourite feeding-ground of the species at the period of spring migration. The Swallow

and Willow Warbler appeared in some numbers on April 18th, and on April 22nd I heard a Sedge Warbler in an osier plantation by the Humberstone beck. Next day, April 23rd, a Cuckoo passed over Weelsby in the evening, travelling N.W.

The next ten days or so were unseasonably cold (altogether unfavourable for observation), and it was not until May 3rd that I heard the next migrant, a Blackcap, at Weelsby, though it had been reported from Limber on good authority a fortnight previously. Next came the Wheatear and Whimbrel, both in the coastal fields at Humberstone on May 4th. On May 5th there was quite a deluge of migrants. Common Whitethroats swarmed everywhere in the hedges. A Sand Martin was flying over some excavations in a field at Laceby. At Limber I heard the song of the Lesser Whitethroat, and at Brompton Dales the reeling song of the Grasshopper Warbler. On May 7th I saw a Common Sandpiper perching on one of the bridges that span the Tetney Lock; also a solitary House Martin hawking for insects. On the following day I heard the Turtle Dove and Tree Pipit at Freshney Bog.

On May 9th I heard the Garden Warbler at Weelsby, and Mr. May saw a Hobby in Hendale Wood. According to the keeper at Hendale Lodge there were a pair of these rare falcons, and I am glad to say that they were permitted to stay unmolested in that locality for over a week, before passing on to their nesting quarters.

On May 11th I saw a pair of Spotted Flycatchers in a shrubbery at Laceby, while on May 14th a party of Swifts were careering down the village street at Waltham in the evening. A drake Garganey visited Newsham Lake on May 21st, and on May 25th I saw a pair of Shovelers on the same stretch of water.

During a visit to Manby Lily Woods on June 1st I heard Wood Warblers in two different localities.

Little Terns appeared at Humberstone Fitties on June 6th, but did not stay to nest, as they have done in previous years. I obtained a fine view of a Grey Plover at Tetney Clays on June 24th.

I did not see either the Reed Warbler or the Whinchat during the period of spring migration, though later I found both nesting. I have generally managed to flush a Green Sandpiper at one of our ponds during April or May, but this spring it appears to have failed to pay us its usual visit.

NIDIFICATION.

On March 31st I disturbed a Tawny Owl from a disused Magpie's nest in a spruce fir in Cuxwold Ash Holt, and on climbing the tree found that the nest contained two eggs.

A pair of Long-tailed Titmice were engaged in building their nest in a privet bush at Weelsby on April 1st, and thirteen days later it contained four eggs.

I saw the nest of a Blackcap at Little Brocklesby on May 25th. It was in a bamboo at a height of 6 feet 5 inches, and contained two eggs.

On May 26th, at Brompton Dales, I saw the nest of a Tree Creeper behind the loose bark of an old elm. It contained seven eggs.

After a search lasting for nearly a month I located the nest of a Marsh Titmouse at Weelsby on June 2nd. It was in a small hole in the top of a decayed elder, and in order to ascertain the contents it was necessary to remove two pieces of bark. This was done very carefully, and the nest was found to contain a brood of fledglings. The bark was replaced and the parent-birds returned immediately and fed their young. The young Marsh Titmice, about eight in number, left the nest nine days later.

On June 15th, my colleague and I investigated the contents of a rabbit-burrow near Grainthorpe Haven, from which a brood of Shelducks had recently been seen to emerge. Having borrowed a spade we excavated for about an hour and found a large quantity of Shelduck down, numerous hatched egg-shells and one infertile egg.

A Corn Bunting's nest in a hedge at Pimlico contained four eggs on July 13th, and on the same day I was shown the nest of a Tree Sparrow in the crevice of a gate-post at Limber, containing five fledglings.

On September 1st, I disturbed a Pheasant with a brood of newly-hatched chicks on Linwood Warren.

AUTUMN MIGRATION.

Towards the end of July there was an influx of Crossbills into North Lincolnshire. They were first noticed at Limber on July 23rd, and it was on August 3rd that I first had the pleasure of making their acquaintance. We had penetrated about half a mile into Cottager's Dale when suddenly a loud, twittering chorus of unfamiliar voices warned us that the Crossbills were on the wing, and almost immediately a flock of about 20—30 birds passed over the woodland ride, with buoyant, erratic flight, like that of the Greenfinch. Eventually they settled in a plantation of larches, and we were able to locate their exact whereabouts by the continuous patter of cones on the ground. The cones attacked were all of the present season's growth, and ample evidence of the activities of the Crossbills was not lacking in other parts of the woods. During the next few months Crossbills spread to all parts of the Brocklesby estate.

The night of July 31st was wet and blustery, and Whimbrels were passing over Weelsby in large numbers, judging by the frequency of their calls.

On September 8th, I heard a Common Whitethroat singing in a roadside hedge near Humberstone, and saw three Yellow Wagtails. I saw the Yellow Wagtail again on September 12th.

Many flocks of Lapwings were flying inland from the coast on September 25th and 26th. On the latter date two skeins of Geese, numbering 27 and 28 respectively, passed over Weelsby at sunset, travelling south.

On the night of October 19th the westerly wind, which since the beginning of the month had blown almost continuously, backed to east, and on the following morning, October 20th, I saw flocks of immigrant Missel Thrushes and Redwings and a solitary Brambling at Weelsby. A small party of Fieldfares appeared on October 22nd.

On October 27th I saw a duck Wigeon and three drake

Shovelers at Lambert Hill, and disturbed a Jack Snipe and seven Common Snipe by the side of Newsham Lake. At the latter place I saw also several flocks of Crossbills and a party of three Goldfinches passing over. Later I saw a party of seven Crossbills perching in the upper branches of a leafless sycamore. At least two of them were mature males in bright red plumage, and whilst perching they sang in chorus, their song reminding me strongly of the subdued song of the Bullfinch.

The Hooded Crow appeared at Weelsby on November 3rd, and on the same date I saw four Snow Buntings at Humberstone Fitties.

On November 7th I had brought to me a live Storm Petrel, which had been found in the small boat of a Grimsby trawler, where it had probably taken refuge during tempestuous weather at sea.

A flock of about 20 to 30 Snow Buntings passed over Weelsby after sunset on November 10th, their twittering notes serving to identify them when the birds themselves were almost invisible in the dusk.

I saw a drake Shoveler at Lambert Hill and a Grey Wagtail at Newsham Lake on November 17th, also several parties of Crossbills.

I saw no Scaup in the Humber estuary during the Autumn months, in spite of an almost daily watch in their accustomed haunts. Although the weather was frequently very rough and squally, the wind blew almost continuously from a southerly or westerly direction, and consequently there was little inducement for these salt-water ducks to enter the river. A solitary duck Scaup appeared in the Grimsby fish dock on November 22nd, but this I considered quite exceptional.

Owing to the effects of the summer drought there were neither Tufted Duck nor Common Pochard at Newsham Lake during the early autumn. The prolonged absence of rain had caused the springs that feed the lake to dry up, and the water fell far below its normal level. In addition the past summer had produced luxuriant growths of Marestail and other aquatic

plants, and consequently the lake was not in a suitable condition for diving ducks. But the persistent rains of the late autumn made good the deficiency, and by the end of the year Newsham Lake was full, and overflowing into the Habrough beck. The first Common Pochard and Tufted Duck, a solitary bird of each species, were noted on December 29th, and on the same date Mr. May flushed a Water Rail on three separate occasions in the same locality.

AUTUMN MIGRATION OF BIRDS ON THE LINCOLNSHIRE COAST BETWEEN HUTTOFT BANK AND CHAPEL POINT, 1929.

A. Roebuck, f.e.s.

As a preliminary to the study of migrants, visits were paid in the Spring to determine what were the resident breeding birds in the immediate vicinity of the sand-dunes, the creeks and the marsh.

Twenty species were found nesting, namely: Swallows, Whitethroats, Linnets, Greenfinches, Chaffinches, Blackbirds, Thrushes, Dunnocks, Robins, Yellow Hammers, Reed Buntings, Reed Warblers, Meadow Pipits, Skylarks, Magpies, Wood Pigeons, Moorhens, Mallards (a few nests), Snipe (one nest deserted with one egg) and Ringed Plovers.

It is not claimed that this list is complete.

Visits were made in the Autumn and any birds identified were noted, especially if they could be considered possible migrants.

Sept. 7th. Ringed Plovers were in flocks. Numbers of Black-headed, Herring, and Common Gulls. Large numbers of Swallows and Lapwings.

Sept. 8th. Pied Wagtails and Corn Buntings. Three Greenshanks on the grass-land near the creek.

Sept. 9th. A few Whitethroats and Stonechats. Large flock of Greenfinches. Large flock of Common Terns. Two Knots and a few Turnstones.

Sept. 10th. Flock of Knots. Flocks of Finches and Yellow Hammers. Some Stonechats and two Whimbrel.

Sept 11th. Flock of Linnets. Two Snipe, a Curlew, and a Rock Pipit, which came close up on a "pill-box".

Sept. 12th. Not a good day. The native Mallards were about, and an odd Curlew.

Sept. 13th. A Heron on the foreshore. One, two or three came regularly to the shore each day. These were from Willoughby Wood. Flock of Little Stints at Chapel. A number of Large Black-backed Gulls, and two Sandwich Terns. Flock of Common Terns. Watched them catch fish for some time.

Sept. 14th. Wheatears appeared. Some Blackcaps and Reed Buntings. Two Whimbrel. Small flocks of Dunlins. Flocks of Meadow Pipits on the landward side of the dunes.

Sept. 15th. A few Pied Flycatchers. Some Rooks in the early morning on the sands. Flock of Sanderling.

Sept. 16th. Large flock of Great Black-backed Gulls; large flock of Terns. Ringed Plovers; a few Turnstones. A large number of Wheatears all along the coast behind the dunes. Dead Guillemot and Kittiwake Gull picked up on the shore.

Oct. 19th. Geese flying over about 9-30 a.m., not identified. Large flocks of Greenfinches, Linnets, Chaffinches and Starlings. Magpies very abundant. Small parties of Rooks, some Redwings, Pied Flycatchers and Bramblings, a few Redshanks and some Kingfishers. For quite a time watched two Water Rails within a few feet of me.

Oct. 20th. A few Redshanks, Whimbrels and three Curlews.

Nov. 22nd. Two large flocks of Rooks noted, which could not with certainty be recognised as native birds. The Herons still frequenting the shore. No waders about. Black-headed Gulls came in from the land at sundown. Only a few left on shore during the day. The flocks of Finches about, but not abundant. The native Mallards were seen. A number of Golden Plovers flying at dusk near Chapel going

North.

Nov. 23rd. Tufted Duck on one of the delphs. A small flock of Snow Buntings flying South along the sands. Flock of Hooded Crows associated with Magpies towards Huttoft Bank. Watched Hooded Crow and Sparrow Hawk fighting, somewhat playfully, at Anderby. The Hawk finally flew away chased for a short distance by the Hoodie. A few Dunlins on the creek and two Ringed Plovers with the Gulls on the sands. The native Mallards on one of the delphs and a Dab-chick. Flock of 26 Brent Geese on a bank of sand near the edge of the sea at dusk. Thousands of Gulls returning from the land for the night on the sea. All about the sand-hills were remains of Sea Buckthorn berries, mixed with bits of grit from the stomachs of birds, showing them to be unsuitable food.

Nov. 24th. Hooded Crows abundant everywhere.

From the above notes it will be seen there was abundant evidence of migration, but little regarding the Rook which is of special interest to the writer. Few Rooks appeared on the shore and although there were plenty of Rooks inland, these could, with the possible exception of two flocks, be identified as our native birds.

A LOWER LIAS AMMONITE.

During recent collecting in the Brick Pit, Long Leys Road, Lincoln, a large Ammonite was obtained from one of the nodules in the Lower Lias horizon. This specimen was submitted to Dr. A. E. Trueman, of Swansea University, who identifies it as *Prodactylioceras (Deroceras) Davœi*, and adds that it is quite a rare species in Lincolnshire. The specimen is $3\frac{3}{4}$ inches in diameter, has a rounded whorl section, and is closely ribbed; the ribs becoming more and more oblique towards the mouth.

F. T. Baker.

BRITISH
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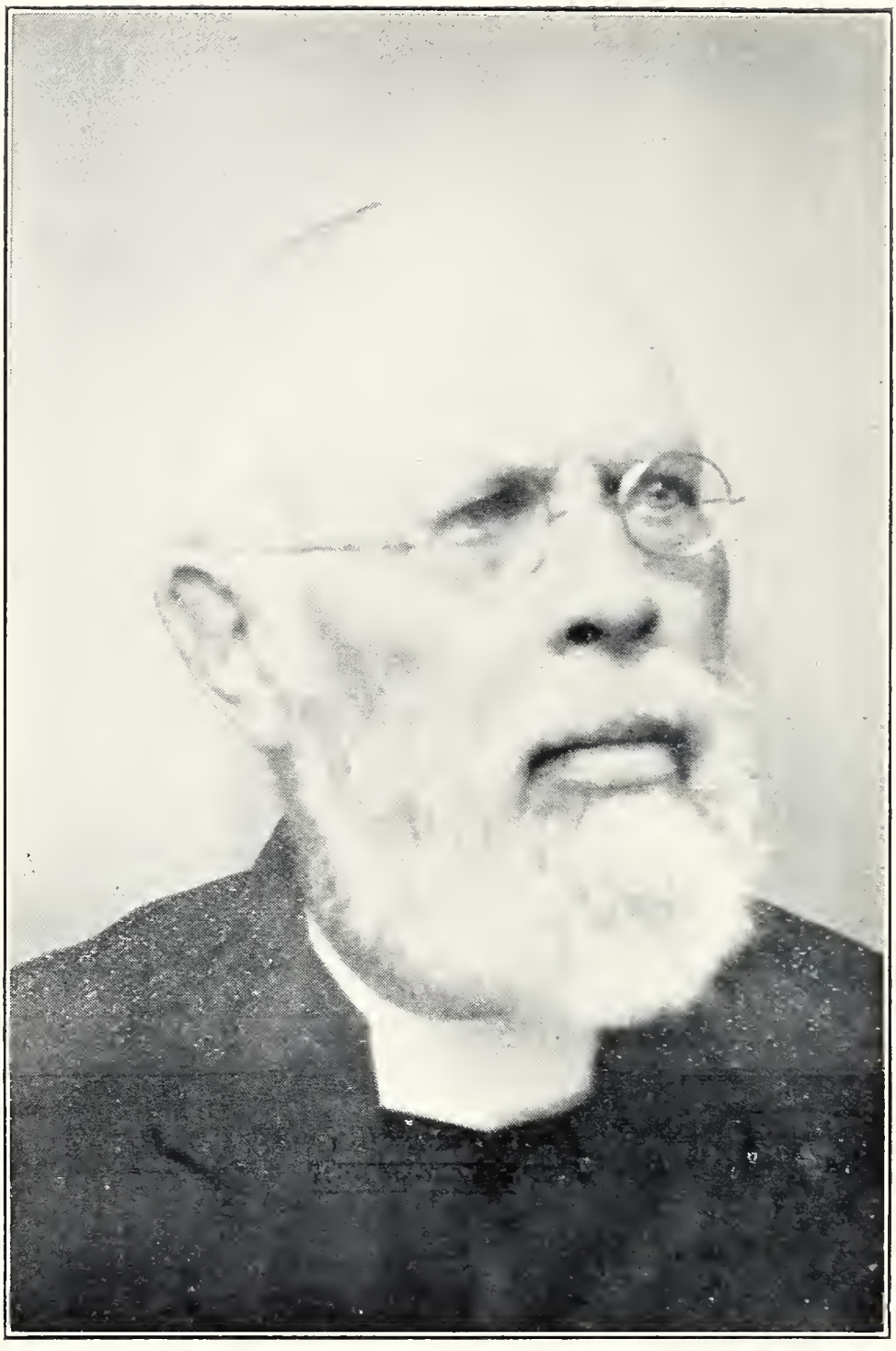


REV. SUMNER COLPOYS WOOD, B.A.

President 1926.

The Twenty-fourth President
OF THE
Lincolnshire Naturalists' Union.

THE REV. SUMNER COLPOYS WOOD, B.A.

It was not for the compilation of long lists of records, nor for the finding of additions to County notes that Mr. Wood was offered the highest honour that the Union can give. Others may be justly proud of the work they have done by augmenting the registers and investigating the distribution of our Fauna and Flora, but our ex-President who highly appreciates the critical work done by so many of the members, is a sincere lover of Nature, not a specialist.

Born in Kent, he made acquaintance with Lincolnshire in 1866. He went to school at Woodbridge, Suffolk, then to Queen's College, Cambridge. In 1895 he came to Stroxton Rectory, his present home, and he is also Rector of Wyville.

It is some thirty years since Mr. Wood joined the Union, so that he is among the small number of workers who are left that joined during the early years, and if regular attendance at the meetings counts, may claim to be the father of the L.N.U. When in 1924 he was asked to accept the position of Vice-President and President elect, he replied "I am willing to do anything to help"; and it was this spirit, evident for many years, that resulted in the unanimous desire of the members that he should become President in 1926. In addition to his high regard for the zoological and botanical work of the Union, Mr. Wood is also interested in archaeology, local history, folk-lore, etc., and his most interesting address on completing his term of office, entitled "Place-names on the Map of Lincolnshire in relation to Natural History", presented quite a fresh phase of nature knowledge. When he first at-

tended a field meeting may be too far back to recollect, but so regular is he still, that should he fail to attend his presence is missed. As an organiser, the recent meeting at Ancaster proved his value. Without undue haste a wide area was covered and fair time given at each point for investigation, by no means easy of accomplishment, having regard to the dispersal of the members at the end of the day, as important a consideration as their assembling at the beginning.

Those who have come in close companionship with Mr. Wood at the field meetings as elsewhere have realized his good fellowship and his quiet humour, and have seldom left him without having learned something new about the lore of this large county.

A. S.

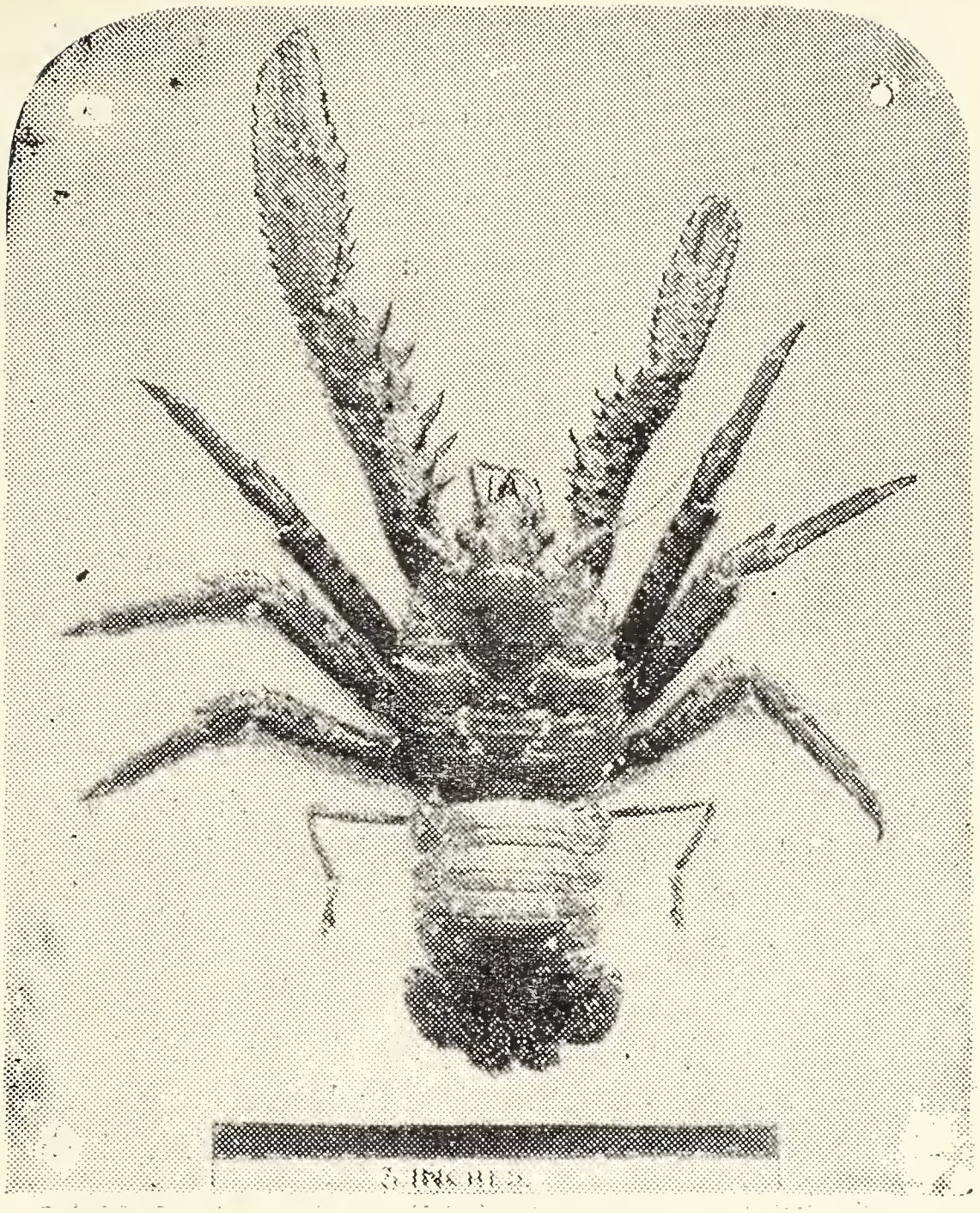
THE WORK OF THE UNION.

It is very desirable that members should as far as possible send information of any interesting observations to those who are keeping and compiling information regarding the Fauna and Flora of the County. Members whose names appear on the first page of this part are desirous of keeping in touch with those who can supply information regarding the subjects mentioned. The object of this work is to preserve such information so that it may be included in reports and lists that it is hoped to publish in the "Transactions". Long lists have already been published and though the expense of printing has caused their continuance to be less frequent, their publication will be resumed as soon as possible.

The Revd. W. W. Mason has removed to 3, Norwich Road, Cromer. He is engaged on a revised Check-list of the County's plants and will be glad to receive reports so that new records may be included. The President is investigating the Freshwater Algæ of the County including the Diatoms, and Mr. Robinson is working at the Diatoms only. Mr. Stream will be pleased to receive material from various localities.

Notes on other subjects should be communicated to the Officers of the Sections concerned or may be sent to the Hon. Sec. who will forward them.

A. S.



GALATHEA STRIGOSA *Fabr.*

This is an addition to our list of Marine Crustaceans. It was taken off the Lincolnshire coast in September 1929 and sent to the City and County Museum, Lincoln, by Mr. M. Delew, of Grimsby, as being unusual to the crab fishers. It is not uncommon to the South coast where it may be seen in the rock pools.

NOTE ON THE GRAIN WEEVIL (CALANDRA GRANARIA, L.). During the last year an old building in Lincoln used as a granary has been infested by this pest. Specimens were sent to Dr. Wallace who identified the species. It is the "weevil" *par excellence*—very difficult to exterminate—and very destructive. A.S.

CITY AND COUNTY MUSEUM, LINCOLN.

During the past year the Museum has completed the equipment of the invertebrate section with a series of cabinets for the reception of reference collections of specimens found in the County. The cabinets comprise from forty to sixty drawers each, thus providing room for a large amount of material. Thanks to members of the Lincolnshire Naturalists' Union there is already a very large representative series of Lepidoptera, including the collection made by the late Mr. F. M. Burton. Mr. C. P. Arnold and Mr. J. F. Musham have contributed their collections and Mr. Guy W. Mason his fine series of Micro-Lepidoptera. Other donors have augmented these with insects in smaller numbers, thus providing a good collection of local Lepidoptera which has now been arranged and labelled from the lists published in the "Transactions"

Conchology is also well represented by the gifts of collections made by the late Mr. W. Denison Roebuck, Mr. J. F. Musham, Mr. C. S. Carter, the late Rev. E. A. Woodruffe-Peacock and others, who have worked assiduously on the Land and Freshwater Mollusca of the County. The Marine Mollusca are well represented by a collection made by Mr. A. Smith. Other branches of Marine Zoology are represented by specimens collected on the Lincolnshire coast, including Sponges and Zoophytes from the collections of Mr. F. M. Burton and Mr. A. Smith. Crustaceans and Echinoderms are also represented.

The Geological section has also been provided for, and the large number of fossils already arranged in the reference cabinets include collections made in the County by several workers in various formations. Though this reference series is of considerable importance to students of Lincolnshire Natural History there are many gaps that require filling. There is need for much more material which should consist of good examples, authentically named, if possible, and always provided with full data as to locality, etc.

A. S.

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